

FIG. 1

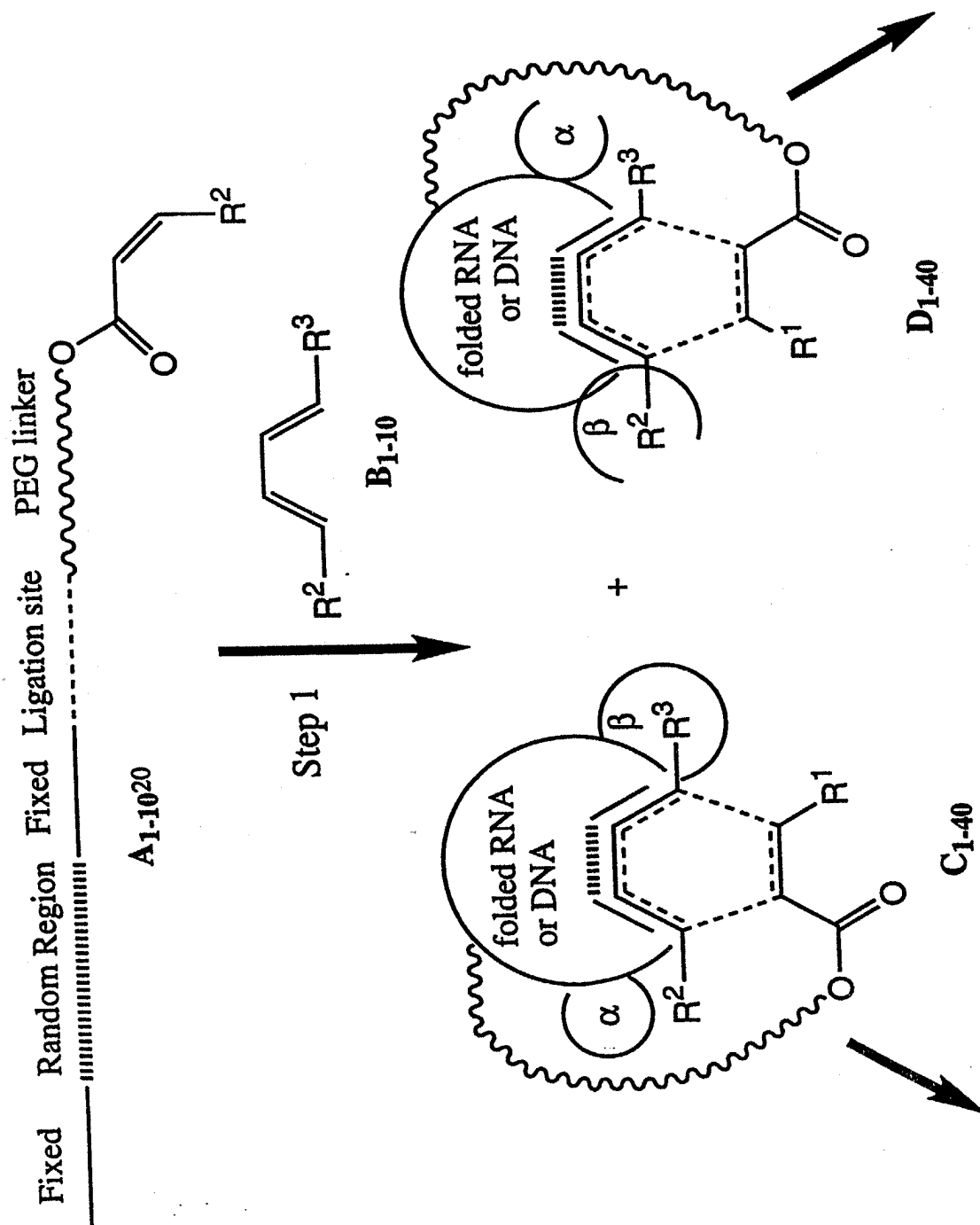


FIG. 2A

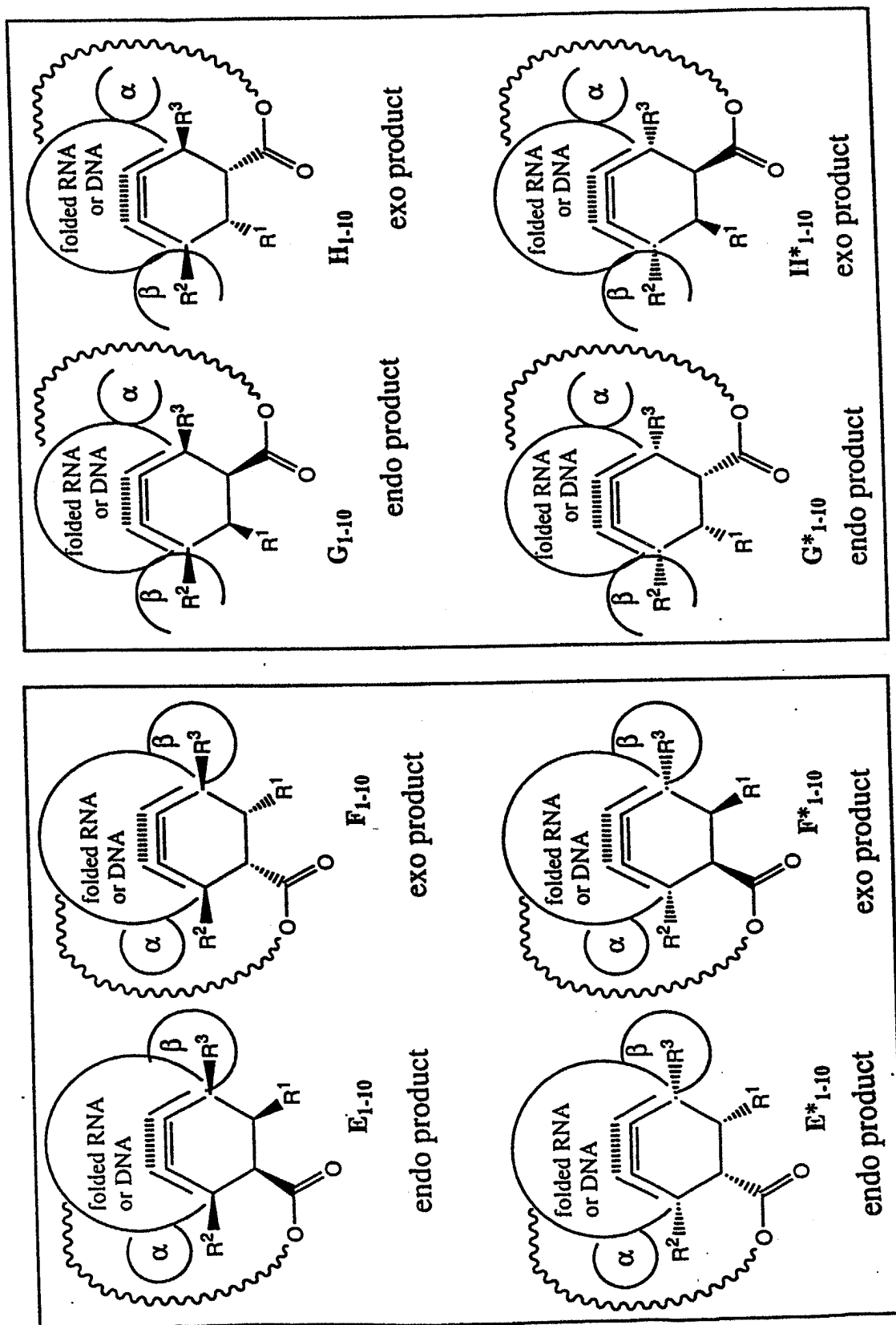


FIG. 2B

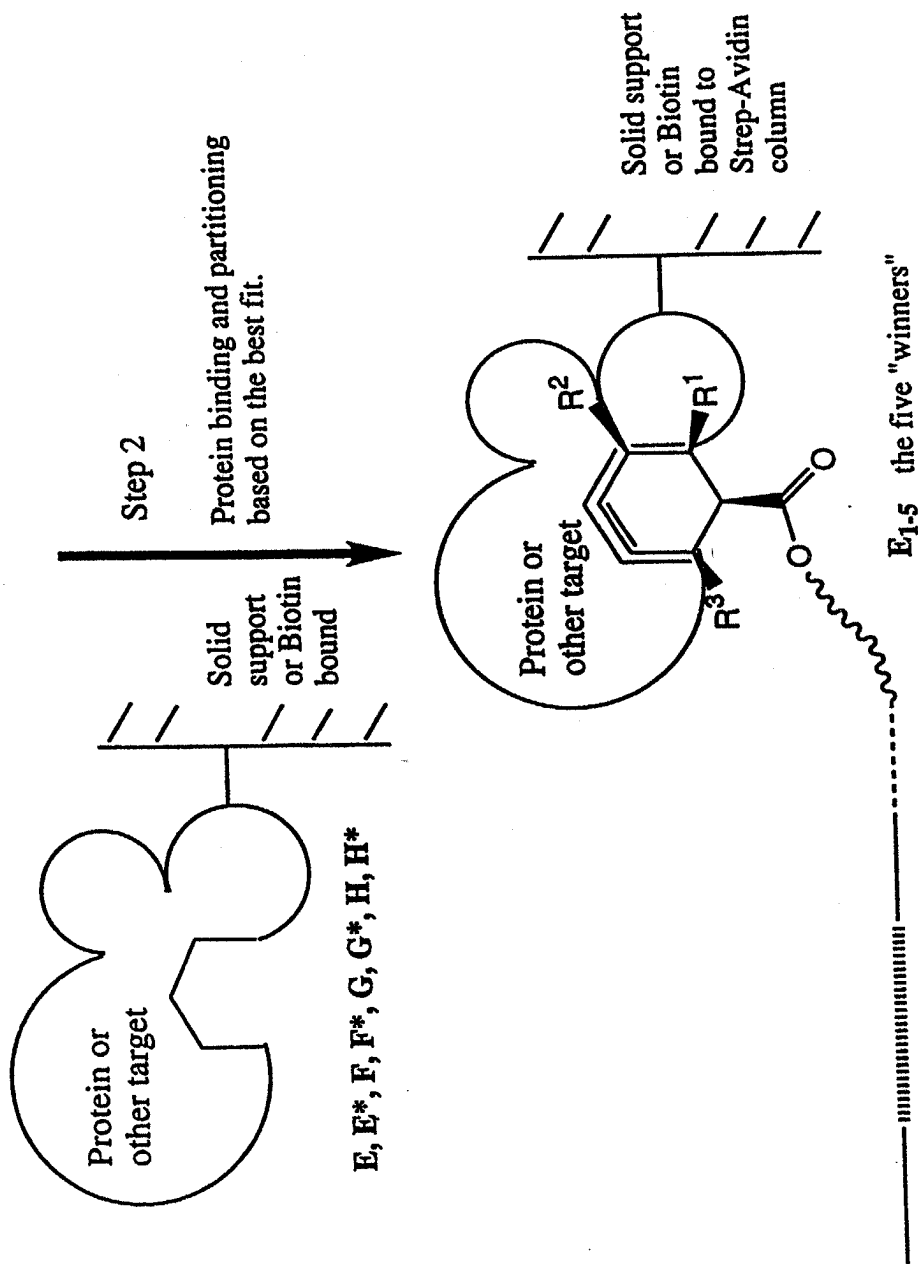
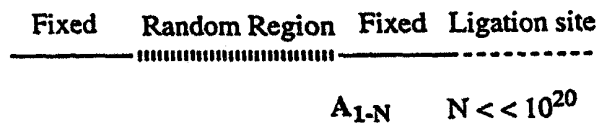
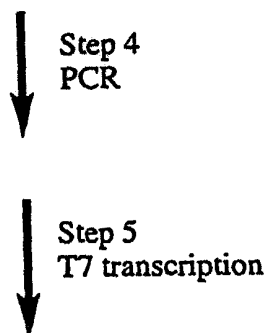


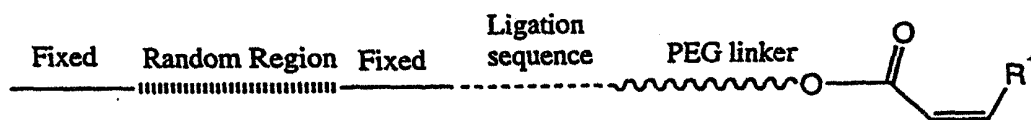
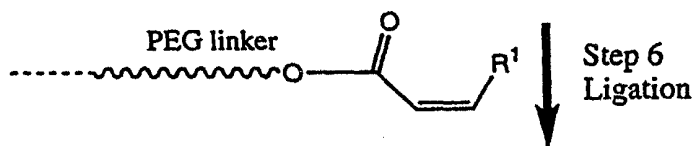
FIG. 2C

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Note that this RNA structure when folded up is the active catalyst for the formation of the cyclohexene products denoted by E above



Repeat Steps 1 through 6 until either catalytic activity is maximized as measured after Step 5 or until binding affinity as in Step 2 levels off and A becomes nonrandom.

Isolate clones and sequence.

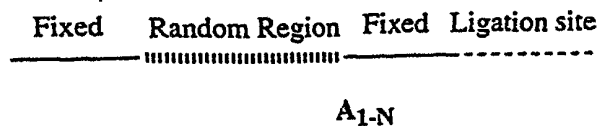


FIG. 2D

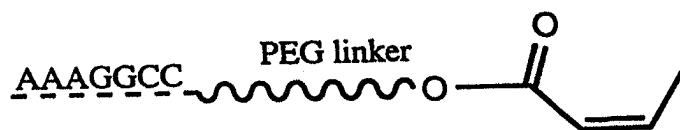


FIG. 3A

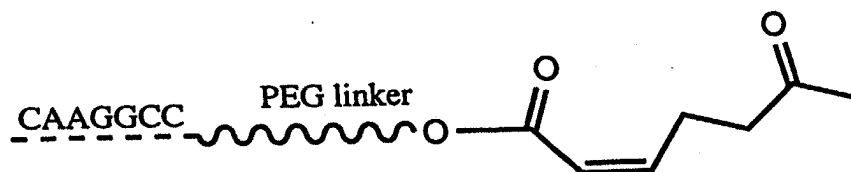


FIG. 3B

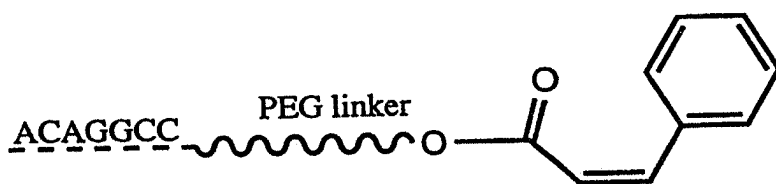


FIG. 3C

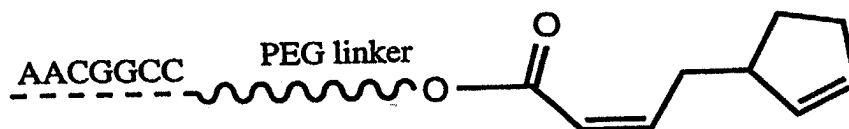


FIG. 3D

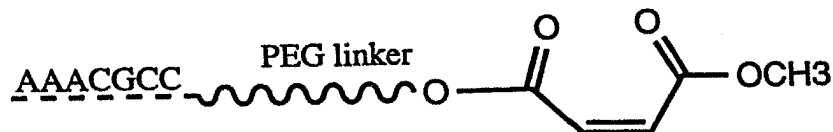


FIG. 3E

A1-1020

Fixed Random Region Fixed Ligation site PEG linker

O=CC



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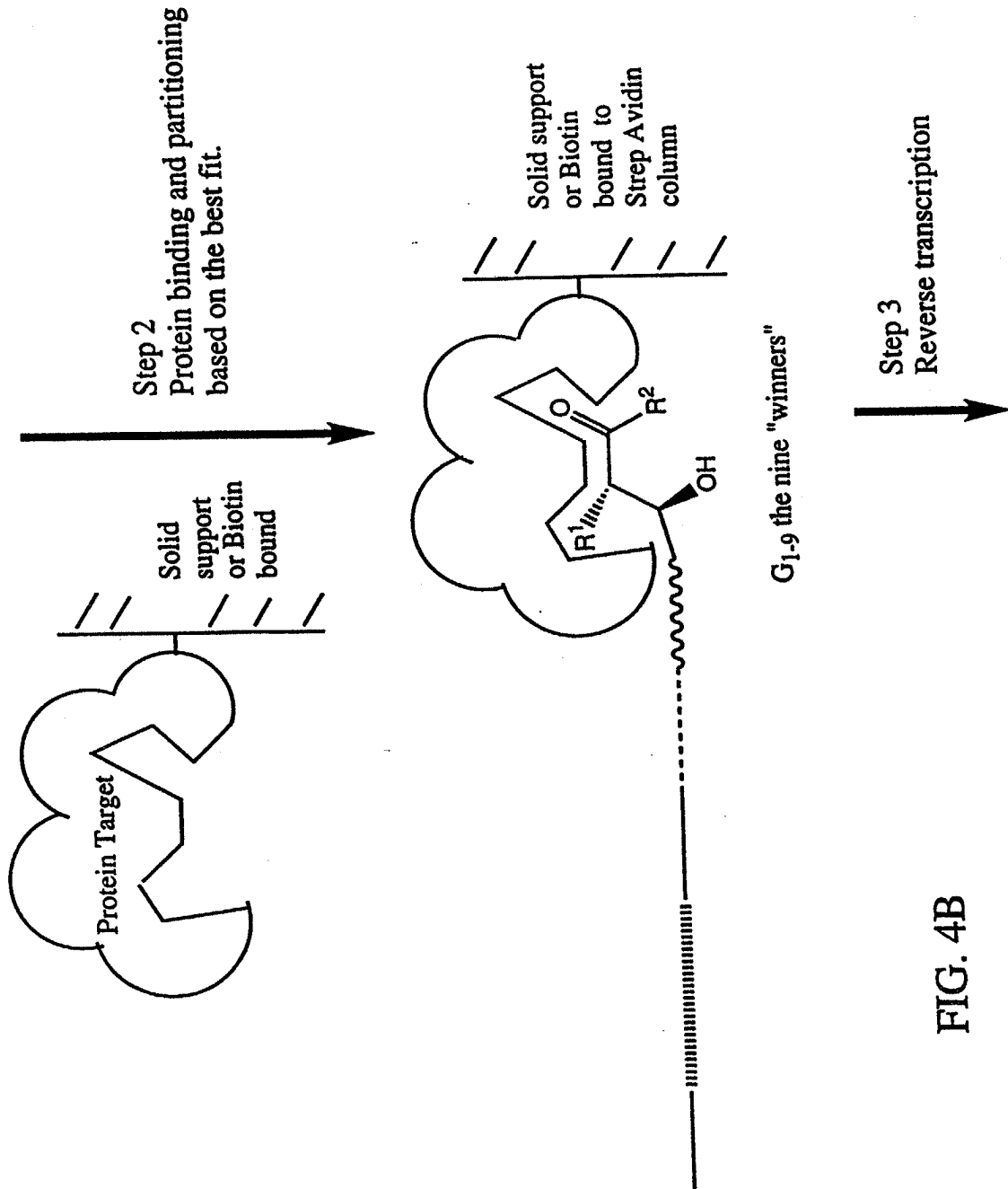


FIG. 4B

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Step 4 PCR

Step 5
T7 transcription

Fixed Random Region Fixed Ligation site

A_{1-N} N < 10²⁰

Step 6 Ligation

PEG linker

O
||
H

Fixed Random Region Fixed Ligation sequence PEG linker

O
||
H

Repeat Steps 1 through 6 until either catalytic activity is maximized as measured after Step 5 or until binding affinity as in Step 2 levels off and A becomes nonrandom.

Isolate clones and sequence.

Fixed Random Region Fixed Ligation site

A_{1-N}

FIG. 4C

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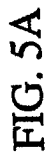


FIG. 5C



FIG. 5B

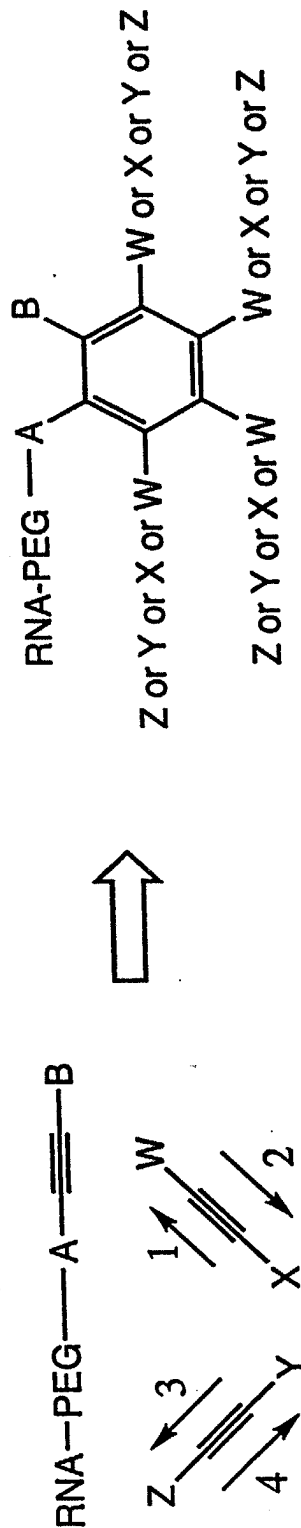


FIG. 6A

1	2	3	4
1 1,1	2,1	3,1	4,1
2 1,2	2,2	3,2	4,2
3 1,3	2,3	3,3	4,3
4 1,4	2,4	3,4	4,4

FIG. 6B

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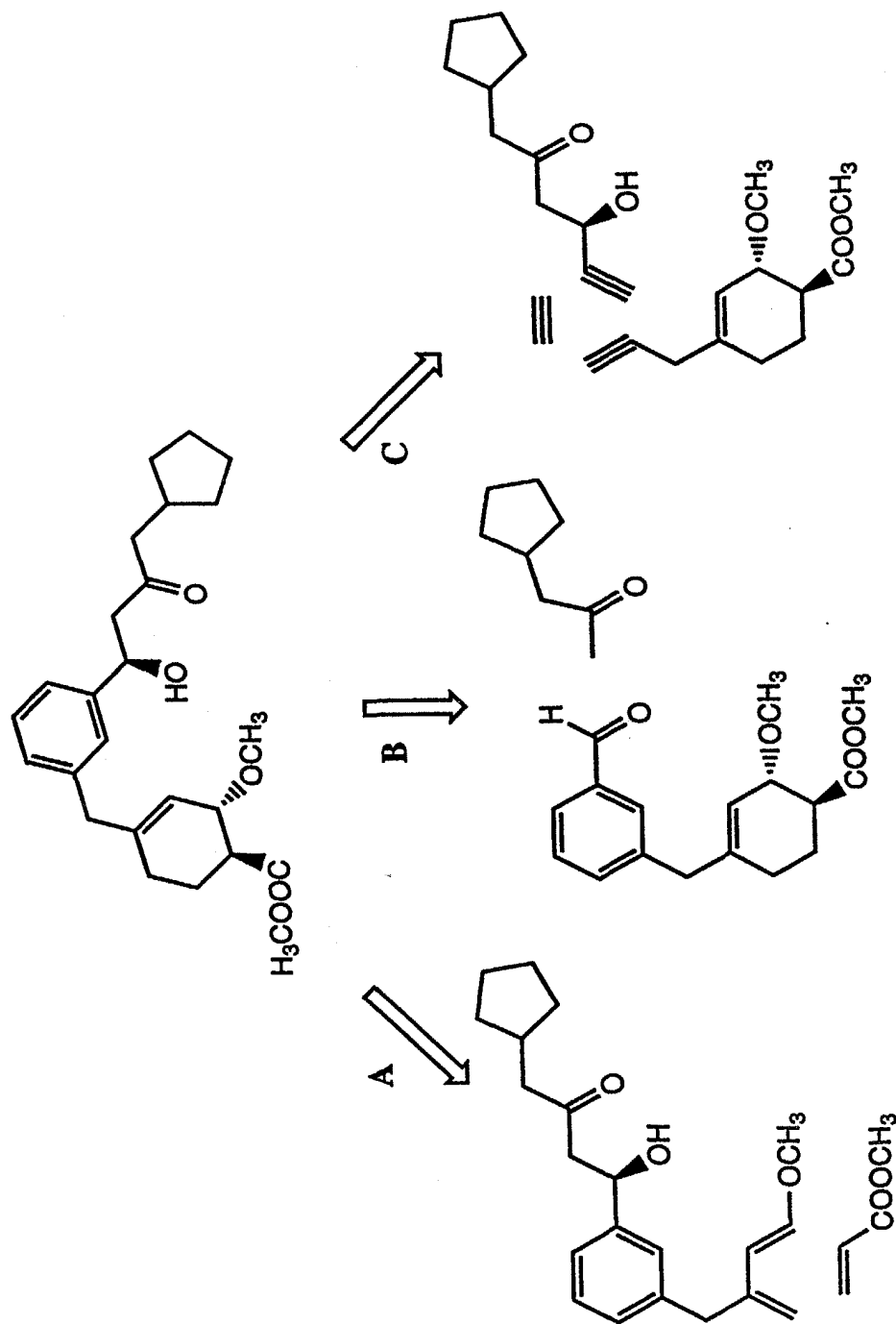


FIG. 7